**ABSTRACT**

Novel Schiff base containing antipyrine and o-vanillin has been synthesized and characterized by various physicochemical techniques such as FTIR, UV-Vis, CHN, 1Hand 13C NMR spectral studies. The thermal behavior of the title compound has been examined with Thermogravimetric-Differential thermal analysis (TG-DTA). The structural properties have been further examined by single crystal X-ray diffraction studies. The X-ray diffraction data shows that the compound contains four molecules in the asymmetric unit. Antifungal activity of the compound has been carried out for four different fungi Aspergillus niger, Aspergillus flavus, Aspergillus terrus and Fusarium Sp at three different concentrations, whereas the compound shows significant activity against the fungi Aspergillus niger.